533 Rec'd PCT/PTO 18 JUL 2000

ADDITIVE PRE-MIX FOR FOOD PRODUCTS

The invention concerns preparing flowable or semifluid food products, in particular fruit sauces, or creams to be used as decorations, or stuffings, for ice-creams, confectionery and catering.

The prior art comprises preparing fruit sauces in industrial premises and the subsequent packaging for the delivery of the product to a professional user, as a confectioner or an ice-cream manufacturer, a cook or a pizza-maker, who introduces it into a complete food product for eating.

Therefore, the professional user is, at present, obliged to supply himself with a considerable range of sauces having different tastes, if he wishes to supply his customers with an acceptable range of products, for example ice creams, or cakes, incorporating said sauces. This involves a considerable increase in costs and, moreover, makes it difficult to preserve the various types of sauces, once the respective package has been opened.

Alternatively, the professional user himself may, if necessary, prepare, in an extemporaneous manner, the sauces he needs, which involves a considerable waste of time. Furthermore it is difficult to obtain a creamy and compacted structure of the sauce and to preserve it after immediate use.

In addition when fruit-salads are to be prepared, a drawback occurs consisting of a quick browning caused by perishability of the fruit, said browning causing, in addition, an alteration of the preparation taste.

An aim of the invention is to supply an user, in particular a professional user, with a compound which considerably facilitates the preparation of flowable or semifluid food products.

According to the invention, there is provided a pasty compound for foodt products containing at least one of the agents listed below:

- antioxidant agent;

- preservative agent;
- acidifying agent;
- stabilising and thickening agent.

All the agents mentioned above may be contained in the compound according to the invention, but the compound may contain just some of said agents, depending on the desired features of the compound.

The antioxidant agent is particularly advisable when the compound is to be used for fruit sauces, because the antioxidant agent inhibits the natural browning of the fruit.

The antioxidant agent preferably comprises ascorbic acid, salts and derivatives thereof, gallates, butylated hydroxyanisole, butilated hydroxytoluene, tocopherols.

The preservative agent has an antimicrobial effect and is particularly advisable for fruit sauces too, because it protects the sauce from microbial attacks.

The preservative agent preferably comprises sorbic acid and its salts, propionic acid and its salts, benzoic acid and its salts, hydroxybenzoates.

The acidifying agent is used to reduce the pH of the sauce resulting from the use of the compound, so as to facilitate the action of the preserving agent. Moreover the acidifying agent is used to freshen up the colours of the fruit and the flavour thereof because it restores the natural acidity of the fruit which has been altered by addition of sugar.

The acidifying agent preferably comprises citric acid, tartaric acid, metatartaric acid, malic acid.

The stabilising and thickening agent gives the compound a certain viscosity, inhibiting its surface flowing in such a way that the sauce which incorporates the compound exhibits a good adherence to a solid support, like the pastry of a cake, or an ice cream.

The stabilising and thickening agent may comprise modified or natural starch, precooked, or non-precooked, gelatines, alginic acid and its salts, guar gum and other gums, agar-agar, carrageenin, meal of carob seeds, pectins, cellulose and

its derivatives, xantan gum.

The stabilising and thickening agent may be activated at room temperature, or at warm conditions (about 75°C).

The compound resulting from using a thickening agent which may be activated at room temperature is prefrably suitable for preparing sauces which have to be used at positive centigrade temperatures.

The compound resulting from using a thickening agent may be activated at warm condition is particularly suitable for preparing sauces which have to be used at negative centigrade temperatures, i.e. in particular to garnish ice cream, deep-frozen cakes, ice-cream cakes and confectionery products in general, both inside and in surface.

The compound preferably is in the form of powder, or creamy paste containing suitable proportions of various agents.

Examples of compounds according to the invention are illustrated here below. The composition of the compound, in each example, is detailed by means of the weight percentage of each ingredient per weight unit of the compound for food products (column A), or by means of the percentage of each component per weight unit of the product obtained using the compound (column B).

Example 1

Compound in powdery form suitable for being used at room temperature.

	A	B
- L-ascorbic acid (antioxidant agent)	0 - 5	0 - 2
- sorbic acid or its salts (preservative agent)	0 - 3	0 - 1,2
- citric acid (acidifying agent)	0 - 10	0 - 4
- modified, or natural, precooked or non-precooked, starch which may be activated at room temperature (stabilising and		

thickening agent)	0 -80	0 - 32
- sugar	qs	

Example 2

Compound in powdery form suitable for being used at negative centigrade temperatures.

	A	B
- L-ascorbic acid (antioxidant agent)	0 - 5	0 - 2
- sorbic acid or its salts (preservative agent)	0 - 3	0 - 1,2
- citric acid (acidifying agent)	0 - 10	0 - 4
- modified, or natural, precooked or non-precooked, starch which may be activated at warm conditions (stabilising and thickening agent)	0 - 80	0 - 32
- sugar	qs	

Example 3

Compound in powdery form containing a stabilising and thickening agent which may be activated at room temperature.

	A	B
- L-ascorbic acid (antioxidant agent)	0 - 10	0 - 4
- sorbic acid or its salts (preservative agent)	0 - 10	0 - 4
- citric acid (acidifying agent)	0 - 30	0 - 12
- modified, or natural, precooked or non-precooked, starch which may be activated at room temperature (stabilising and thickening agent)	0 - 80	0 - 32
- sugar	qs	

Example 4

Compound in powdery form containing a stabilising and thickening agent which may be activated at warm conditions

	A	B
- L-ascorbic acid (antioxidant agent)	0 - 10	0 - 4
- sorbic acid or its salts (preservative agent)	0 - 10	0 - 4
- citric acid (acidifying agent)	0 - 30	0 - 12
- modified, or natural, precooked or non-precooked, starch which may be activated at warm conditions (stabilising and thickening agent)	0 - 80	0 - 32
- sugar or dehydrated glucose syrup	qs	

Example 5

Compound in the form of a dense paste.

	A	B
- L-ascorbic acid (antioxidant agent)	0 - 10	0 - 4
- sorbic acid or its salts (preservative agent)	0 - 10	0 - 4
- citric acid (acidifying agent)	0 - 30	0 - 12
- modified, or natural, precooked or non-precooked, starch (stabilising and thickening agent)	0 - 80	0 - 32
- sugar or fructose, water, glucose syrup	qs	

The percentages of the ingredients indicated in column A are merely exemplificative, since also pastes having percentages not comprised within the ranges indicated may make possible to obtain a satisfactory product, if the ingredients are used in

suitable proportions with respect to the other ingredients of the product, in particular water, sugar and fruit. Therefore, in view of the results which can be obtained in connection with the food product, the percentage of the various ingredients shown in column B is more significant.

The wide range of values shown for the percentage of the starch depends on the features desired for the food product to be obtained. For example for fruit sauces to be used for garnishing ice creams, a certain degree of flowability of the product is required, which implies a relatively small quantity of starch, whereas for confectionery sauces, a greater thickness of the product may be required, so that it does not tend to flow, which implies a relatively high quantity of starch.

Particularly satisfactory results have been obtained using a modified starch.

A fruit sauce to be used at positive centigrade temperatures may be preprared by dry mixing a suitable quantity of compound of Example 1 with a suitable quantity of sugar, or fructose, adding water and subsequently adding fresh, or unfrozen, fruit, or fruit-juice.

Suggested doses for preparing a sauce containing 1 Kg of fruit:

- sugar 375 g
- compound of Example 1 125 g
- water 250 g

To facilitate the dilution in water, it is preferred that the water is at a temperature greater than 50 °C.

Another fruit sauce to be used at positive centigrade temperatures and suitable for garnishing ice-creams may be preprared by dry mixing a suitable quantity of compound of Example 3 with a suitable quantity of sugar, or fructose, adding water and subsequently adding fresh, or unfrozen, fruit, or fruit-juice.

Suggested doses for preparing a fruit sauce for garnishing ice creams:

- sugar 150 g to 380 g
- compound of Example 3 60 g to 100 g
- water 100 g to 300 g
- fruit 400 g to 500 g

To facilitate the dilution in water, it is preferred that the water is at a temperature greater than 50 °C.

The sauce obtained reaches an optimal degree of brightness and creaminess after about 2 hours from preparation.

A further fruit sauce to be used at positive centigrade temperatures and suitable for garnishing ice-creams may be preprared by dry mixing a suitable quantity of compound of Example 5 with a suitable quantity of fresh, or unfrozen, fruit, or fruit-juice.

Suggested doses for preparing a fruit sauce for garnishing ice creams:

- compound of Example 5 400 g to 500 g
- fruit 400 g to 500 g

The ratio between the quantity of compound and the quantity of fruit may be advatageously about 1:1.

The sauce obtained reaches an optimal degree of brightness and creaminess after about 30 min from preparation.

A fruit sauce to be used at negative centigrade temperatures and containing fruit, possibly pieces of fruit, may be prepared by performing a preliminary process of partial candying of the fruit, dry mixing a suitable quantity of compound of Example 2 with a suitable quantity of sugar, or fructose, adding water to the mixture and finally adding the partially candied fruit previosly obtained.

Suggested doses for preparing a sauce containing 1 Kg of fruit:

- sugar for precandying 1000 g
- temperature of precandying 50 °C
- time of precandying (about) 5 hours
- compound of Example 2 125 g
- sugar 50 g
- water 250 g

- temperature of activation of compound 75 °C
- time for preparing (about) 3 min

The sauce obtained has a very bright appearence with natural coloration.

Another fruit sauce to be used at negative centigrade temperatures and containing fruit, possibly pieces of fruit, may be prepared by performing a preliminary process of partial candying of the fruit, dry mixing a suitable quantity of compound of Example 3 with a suitable quantity of sugar, or fructose, adding water to the mixture and finally adding the partially candied fruit previosly obtained.

Suggested doses for precandying fruit to be used in the preparation of the fruit sauce:

- fruit 480 g
- sugar for precandying 320 g
- temperature of precandying 50 °C
- time of precandying (about) 5 hours

Suggested doses for preparing the sauce using the precandied fruit:

- compound of Example 3 60 g
- sugar 50 g
- water 100 g
- precandied fruit 800 g
- time for preparing (about) 3 min

The sauce obtained has a very bright appearence with natural coloration.

A sauce to be used at negative centigrade temperatures and obtained using fruit mix, puree, or fruit juice, may be prepared by dry-mixing the compound of Example 2 with a suitable quantity of sugar or fructose, adding the fruit mix, or puree, or fruit juice and heating at a temperature of 75 °C for a few minutes.

Suggested doses for preparing a sauce containing 1 Kg of fruit mix, puree, or fruit juice:

- sugar 700 g
- compound of Example 2 125 g

- temperature of activation for a few minutes 75 °C

The sauce obtained has a very bright appearence with natural coloration.

Another sauce to be used at negative centigrade temperatures and obtained using fruit mix, puree, or fruit juice, may be prepared by dry-mixing the compound of Example 3 with a suitable quantity of sugar or fructose, adding water, the fruit mix, or puree, or fruit juice.

Suggested doses for preparing a sauce containing fruit mix, puree, or fruit juice:

- sugar 380 g
- compound of Example 3 70 g
- water 150 g
- fruit mix 400 g

The sauce obtained has a very bright appearence with natural coloration.

A further sauce to be used at negative centigrade temperatures and obtained using fruit mix, puree, or fruit juice, may be prepared by mixing the compound of Example 5 with a suitable quantity of fruit mix, or puree, or fruit juice.

Suggested doses for preparing a sauce containing fruit mix, puree, or fruit juice:

- compound of Example 5 700 g
- fruit mix 500 g

The sauce obtained has a very bright appearence with natural coloration.

A fruit-salad sauce obtained using pieces of fresh fruit may be prepared by dissolving the coumpound of Example 3 in water and adding the pieces of fruit.

Suggested doses:

- compound of Example 3 150 g
- water 500 g
- pieces of fruit 1000 g

Another fruit-salad sauceobtained by using pieces of fresh fruit may be prepared by dry mixing the compound of Example 3

with a suitable quantity of sugar, adding water and the pieces of fruit.

Suggested doses:

- compound of Example 3 about 30 g
- water 340 g
- pieces of fruit 440 g

The resulting fruit salad has a bright appearence, a natural colour and taste and is protected from natural oxidation and microbial attacks.

Another fruit-salad sauce may be prepared by amalgamating the pasty compound of Example 5 with pieces of fruit and, if necessary, with water.

Suggested doses:

- compound of Example 5 200 g
- water (if necessary) 100 g
- pieces of fruit 1000 g

A sauce containing fruit and suitable for stuffing baked confectionery, such as short pastry shells or tarts, may be prepared by mixing the compound of Example 4 with sugar, adding water, heating up to boiling temperature, adding fruit, possibly pieces of fruit, after heating has terminated.

Suggested doses:

- compound of Example 4 50 g
- sugar 200 g
- water 250 g
- fruit 500 g

A sauce containing fruit suitable for stuffing baked confectionery may be prepared by mixing the compound of Example 4 with sugar, adding water, heating up to boiling temperature and adding fruit, possibly pieces of fruit, after heating has terminated.

Suggested doses:

- compound of Example 4 90 g
- sugar 350 g
- water 180 g
- fruit 440 g

Another sauce containing fruit suitable for stuffing baked confectionery may be prepared by mixing the compound of Example 5 with unfrozen and drained fruit.

Suggested doses:

- compound of Example 5 700 g
- fruit (defrozen and drained) 500 g

A fruit sauce suitable for stuffing and garnishing spoon desserts, which are to be eaten at a positive temperature, may be prepared by mixing the compound of Example 4 with sugar, adding water, heating up to boiling temperature, adding fruit, possibly pieces of fruit, after heating has terminated and cooling.

Suggested doses:

- compound of Example 4 60 g
- sugar 200 g
- water 240 g
- fruit 500 g

The sauces obtained using the compounds according to the invention may be preserved in a refrigerator for a period of about 5 days, without organoleptic (microbiological) alterations, or alterations of the appearence, and outside the refrigerator for a period of about 3 days.

The invention provides a practical and versatile compound which allows the user to freely choose the type of sauce to be prepared depending on the particular tastes of his customers, or on the range of fresh fruit available on the market. Therefore it is no more necessary for the user to supply himself with ready-for-use sauces of different tastes in order to be able to offer his customers the desired variety of flavours. This implies a considerable economic saving and a simplification in managing the stocks of product.

A further advantage of the invention is that the sauces obtained have a very natural flavour and appearence, and do not have the flavour of cooked fruit which is usually produced by pasteurizing processes which are usually performed in the industrial preparation of the ready-to-use package sauces of

the prior art.

Moreover, with respect to conventional sauces, the compound according to the invention may be advantageously prepared without adding artificial flavours, which influence the taste of the preparation.

Finally, a further advantage lies in the fact that the compund according to the invention allows the user to prepare fruit sauces having greater or less consistency by simply increasing or decresing, respectively, the amount of compound used.